through animal charcoal may be shown by passing water containing organic matter through the latter substance; on testing this filtered liquid with Condy's fluid, it will become in many cases decolorized. The simplicity of the process is one of its great advantages, and even if, from careless application, a portion of the salt is left in solution, or of the peroxide of manganese in suspension, no harm can result. But if the adjustment is carefully made, all the metallic oxide is precipitated, as well as the carbonate of lime (if present) held in solution by excess of carbonic acid, which is neutralized by the liberated alkali of the permanganate, and the water by simple decantation is obtained pure, except probably (when used alone) in the destruction of some organic germs.

"In sulphur water—*i. e.*, that containing hydrosulphuric acid, sulphurous acid, etc.—the colour will be destroyed in the test (on account of the deoxidizing properties of these gases) without the presence of organic matter, and the water left free from impurity with the precipitation of the oxide of manganese and free sulphur. If sulphide of ammonium is present, carbonate of ammonia is formed. Lead, iron, and copper can be separated from water by the same method.

"In the application of these salts to the purification of water on a large scale, many questions of economy are involved, but, as Dr. Letheby remarks, 'it must not be forgotten that only a very small part of the water delivered by a company is used for primary domestic purposes, the great bulk of it being employed for flushing closets, drains, and sewers, for watering streets, and for many manufacturing purposes. It would therefore manifestly be an unnecessary wasteful application of a tedious and expensive process to do that at the works which can be so easily, so surely, and so much more economically done at the point of consumption.'

"Water which is employed for drinking purposes should possess the following properties: It should be clear, colourless, inodorous, and tasteless; it should be well aerated, and especially cool. It is difficult to fix the exact amount of dissolved constituents. As a general rule, subject to limitation, it should not contain more than—of organic matter, 1 grain; of carbonate of lime, 16 grains; of sulphate of lime, 3 grains; of chloride of sodium, 10 grains; of carbonate of soda, 20 grains, per gallon."

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

52. *Poisoning by Tobacco-Juice.*—M. A. Marchant relates the following case: A smoker, in drawing air strongly through an obstructed pipe, in order to make it more permeable, took into his mouth and involuntarily swallowed a dislodged plug of inspissated tobacco-juice. In a short time his head became heavy, his thoughts confused, his speech indistinct; he had noises in the ears, a disagreeable feeling at the epigastrium, and dryness of the throat. Believing that the open air would remove these feelings, the patient went out; but the headache and giddiness increased, and the patient at last fell down insensible, in which condition he was after some time found by a passenger and carried into his house. Copious and repeated vomiting then set in; consciousness returned; but the patient fell into a restless, somnolent state. He had severe headache, *malaise*, and faintness, during the whole of the next day. The spontaneous recovery may be attributed either to the small amount of nicotine contained in the plug, or to the imperfect absorption of the poison contained in the hardened plug.—*Brit. and For., Med. Chir. Rev.*, April, 1866, from *Journal de Bruxelles.*

53. *Death from Swallowing Four Ounces of Chloroform.*—E. C. Board, Esq., reports (*British Med. Journ.*, May 26, 1866) an interesting case of this. The subject of it was a strong, muscular porter, aged forty-two, addicted to drink, who took about four-ounces of chloroform, mistaking it for alcohol, and did not find out his error until after that quantity was swallowed. About an

hour afterwards ($3\frac{1}{2}$ P.M., May 16th, 1866) "he was brought to the Infirmary, having previously vomited once or twice. He could then just manage to sit up in a chair, but was very cold, and almost pulseless; his pupils were very much dilated, and he could hardly articulate. He seemed scarcely to understand anything said to him, and kept on muttering. The stomach-pump was then used, and altogether about two quarts of warm water were thrown into his stomach, and pumped out again. The water returned almost unchanged as to colour, and with no food mixed with it, but was so impregnated with chloroform as to fill the room and passage outside with a strong smell of that spirit. Brandy was then administered to him; mustard poultices were applied to the præcordial region and the calves of his legs, and he was galvanized for a considerable time with no apparent effect. I then gave him a drop of croton oil, and continued to administer small doses of brandy. In about an hour and a half after admission he rallied a little; the surface became warmer, the pupils contracted, and he was more sensible to the action of the galvanic battery. In half an hour all the worse symptoms returned; the pupils were fully dilated, the breathing stertorous, the surface covered with a cold sweat. He continued to rally for a short time, and then sink again, for an hour and a half, when his lips became dark purple, and his whole face livid. No action of the heart could be detected, and his respiration was gasping and very interrupted. I then applied the galvanic battery for nearly half an hour, when his breathing again became regular, and his lips and face regained their natural colour for a short time; but he then suddenly sank into the former state, and died at a quarter to nine o'clock P.M., six hours after he had taken the chloroform.

"*Post-mortem examination, fifteen hours after death.*—Rigor mortis was well marked. The body was generally well nourished. The calvarium was firmly attached to the dura mater along the mesial line. There was a considerable amount of fluid under the arachnoid, which was thickened and opaque, and did not readily peel off the convolutions. All the ventricles were full (though not distended) of clear fluid. The brain itself was firm, and appeared otherwise healthy. The veins of the cords and the sinuses were very much gorged with blood. The lungs were very much engorged with blood; there were several small patches of pulmonary apoplexy. The heart was healthy; the blood in all the cavities was quite fluid. The stomach was one-quarter full of dark fluid, which smelt very strongly of chloroform. Its internal surface was slightly inflamed in patches, and the mucous membrane was softened. The duodenum and commencement of the jejunum were healthy, but the lower part of the jejunum and the greater part of the ileum were of a dark chocolate colour, and became quite black after an hour or an hour and a half. The parts of the intestine round Peyer's patches were not affected in this manner. The large intestine was perfectly healthy throughout. There was no effusion or exudation into the peritoneal cavity. The liver was of usual size, but fatty. The gall-bladder was full of bile. The kidneys were granular; the capsule peeled off with difficulty. The pancreas, spleen, and bladder were healthy."